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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/986,907	11/13/2001	Takeshi Mitsuishi	8071.0007	6647

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EXAMINER

PRITCHETT, JOSHUA L

ART UNIT	PAPER NUMBER
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2872

DATE MAILED: 10/22/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/986,907

Applicant(s)

MITSUISHI ET AL.

Examiner

Joshua L Pritchett

Art Unit

2872

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Information Disclosure Statement

The copending application 09/995,827 was considered by the examiner; however it was lined through on the Information Disclosure Statement, because application are not printed on the patent when the patent is published.

Claim Objections

Claims 2-6 and 8 are objected to as containing parenthetical information that creates ambiguous claim language and therefore makes the metes and bounds of the claim unclear as to the claimed combination.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

Art Unit: 2872

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1-8 are rejected under 35 U.S.C. 102(e) as being anticipated by Belleville (US 6,387,517).

Regarding claim 1, Belleville teaches a composition comprising niobium oxide, zirconium oxide and yttrium oxide (col. 7 lines 4-15).


Regarding claim 2, Belleville teaches the composition of claim 1 additionally containing aluminum oxide (col. 7 lines 4-15).

Regarding claim 3, Belleville teaches a composition comprising 60-90% by weight niobium oxide (col. 7 lines 13-14).

Regarding claim 4, Belleville teaches a composition comprising 5-20% by weight zirconium oxide (col. 7 lines 13-14).

Regarding claim 5, Belleville teaches a composition comprising 5-35% by weight yttrium oxide (col. 7 lines 13-14).

Regarding claim 6, Belleville teaches a composition comprising 60-90% by weight niobium oxide, 5-20% by weight zirconium oxide, and 5-35% by weight yttrium oxide (col. 7 lines 4-15).



Regarding claim 7, Belleville teaches the composition of claim 6 additionally containing aluminum oxide (col. 7 lines 4-15).

Regarding claim 8, Belleville teaches the composition of claim 6 containing 0.3-7.5% by weight aluminum oxide (col. 7 lines 13-14).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 9-11 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Belleville in view of Lindmayer (US 4,246,043).

Regarding claim 9, Belleville teaches the invention as claimed including that any method that allows a uniform deposit of a layer may be used in combination with the composition (col. 13 lines 41-42). Sintering is defined as the process of making a unitary mass of several components through the use of heating while not melting the components. Belleville teaches the cross linking, which means the same as creating a unitary mass, that includes mixing and heating the metal oxides (col. 7 lines 36-49). Belleville lacks reference to the use of vaporization as a means of creating the antireflective coating. Lindmayer teaches the use of evaporation as a means of placing a coating on a substrate (col. 3 lines 23-24). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use vaporization as

taught by Lindmayer to place the coating with the composition taught by Belleville on a substrate for the purpose of cheap and efficient production.

Regarding claim 10, Belleville teaches the substrate being made of plastic (col. 9 line 17).

Regarding claim 11, Belleville teaches the plastic substrate having one or more layers (Fig. 4).

Regarding claim 13, Belleville teaches the alternating of a metal oxide layer and silicon dioxide layer on a plastic substrate (col. 15 line 65 – col. 16 line 2).

Claims 12 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Belleville in view of Lindmayer as applied to claim 10 above, and further in view of Knapp (US 5,846,649).

Regarding claim 12, Belleville in combination with Lindmayer teach the invention as claimed but lack reference to the use of an ion-assisted process in the creation of antireflective layers. Knapp teaches the use of an ion-assisted process for creating antireflective layers (col. 5 lines 23-24). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the ion-assisted process of Knapp to aid in the creation of the antireflective layers taught by Belleville and Lindmayer for the purpose of removing any residual contaminants before depositing the layers on the substrate.

Regarding claim 14, Belleville teaches the alternating of a metal oxide layer and silicon dioxide layer on a plastic substrate (col. 15 line 65 – col. 16 line 2).

Claims 15 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Belleville in view of Lindmayer as applied to claims 13 above, and further in view of Asai (US 5,116,644).

Regarding claim 15, Belleville in combination with Lindmayer teaches the invention as claimed but lack reference to a hard coat layer on the substrate. Asai teaches the use of a hard coat layer (col. 1 lines 33-34). It would have been obvious to a person of ordinary skill in the art at the time the invention was created to use the hard coat layer taught by Asai with the antireflective element taught by Belleville and Lindmayer for the purpose of giving the antireflective element greater durability.

Regarding claim 17, Belleville teaches the use of the antireflective element as a spectacle lens (col. 13 line 36).

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Belleville in view of Lindmayer and Knapp as applied to claim 14 above, and further in view of Asai.

Belleville in combination with Lindmayer and Knapp teach the invention as claimed but lack reference to a hard coat layer on the substrate. Asai teaches the use of a hard coat layer (col. 1 lines 33-34). It would have been obvious to a person of ordinary skill in the art at the time the invention was created to use the hard coat layer taught by Asai with the antireflective element taught by Belleville, Lindmayer and Knapp for the purpose of giving the antireflective element greater durability.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Bjornard (US 5,579,162) teaches the use of alternating layers in the creating of antireflective coatings and the use of metal oxides with a refractive index between 1.95 and 2.2.

Kienel (US 4,161,560) teaches the use of zirconium oxide and aluminum oxide in antireflective coatings and mixing oxides to create antireflective coatings.

Sopko (US 6,436,541) teaches the use of alternating layer in antireflective coatings with good incident light transmission.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joshua L Pritchett whose telephone number is 703-305-7919. The examiner can normally be reached on Monday - Friday 7:00 - 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cassandra Spyrou can be reached on 703-308-1687. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

JLP
October 17, 2002



**Cassandra Spyrou
Supervisory Patent Examiner
Technology Center 2800**